WSDOT has identified the financial need of the state highway system through a collaborative process with its transportation planning partners. We have developed transportation solutions based on the goals, objectives, and action strategies, in the WTP, adopted by the Washington State Transportation Commission. A comprehensive listing of the 20-year state highway system improvement strategies including planning level cost estimates have been compiled in Appendix K. (The entire database can be viewed at *http://wsdot.wa.gov/ppsc/wtp/database*)

The chart below illustrates the 20-year need in each of the WSDOT program areas during the 20-year period of this plan (Figure1).

Washington State Highway System Plan Needs for 2003-2022
Total Need: $57.3 ~~$57.0~~ billion
(Dollars shown below in billions - 2001 dollars)

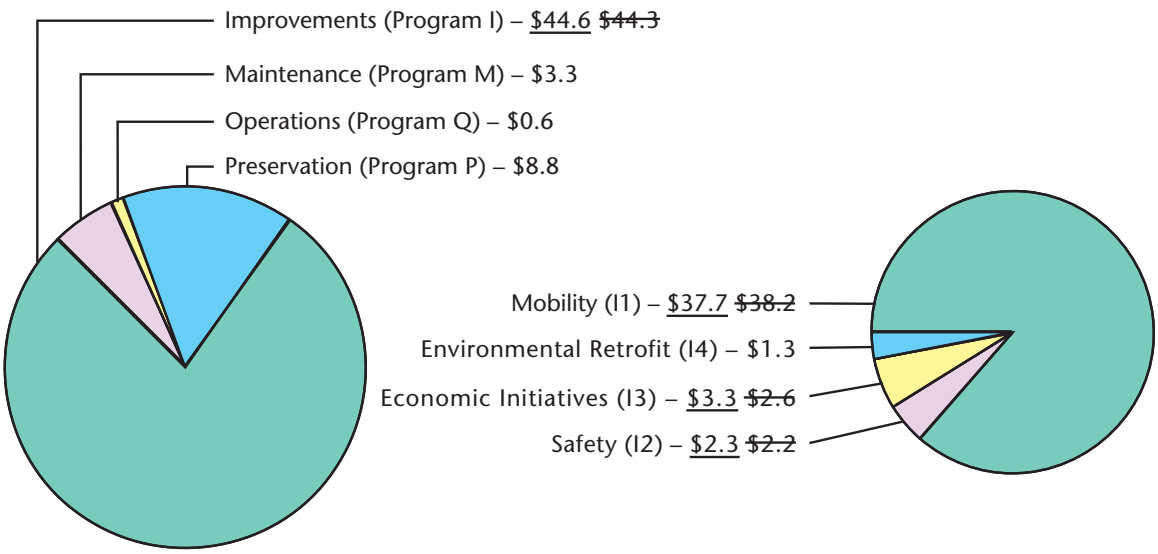


Figure 1. *The 20-year Highway System Plan is structured by objectives and action strategies for highway system facilities and maintenance and operations services. Since funding is not available to meet all the identified needs, priorities must be set. The plan is focused on taking care of the existing system first by establishing targets to fully fund Maintenance (M), Traffic Operations (Q), and Preservation (P) programs. Tradeoff decisions must be made to distribute any remaining funding among capital improvement areas: Mobility (I1), Highway Safety (I2), Economic Initiatives (I3), and Environmental Retrofit (I4). These improvement areas are subject to the discretion of future programming decisions to balance long- and short-term strategies to meet 20-year HSP targets.*

WSDOT forecasts $12.8 billion in revenue from current transportation revenue sources to address state highway system needs through the year 2022. The total financial need identified in the HSP through 2022 for the state highway system is estimated at $57.3 ~~$57~~ billion. The gap between highway needs and existing transportation revenues widens as investments fail to keep pace with growth. In order to meet growing needs, additional funding is necessary.

The Washington State Transportation Commission (WSTC) establishes transportation policy as required by the Washington State Legislature. The WSTC consists of seven members appointed by the Governor. The WSTC provides oversight to ensure that the department delivers a quality, multi-modal transportation system that moves people and goods safely and efficiently. The WSTC also proposes transportation planning and funding recommendations for submission to the Legislature.

WSDOT in turn, is required to plan for the maintenance, preservation, operation and improvement of the state owned transportation network in accordance with WSTC Policy, state laws, and federal requirements (see Appendix E).

The HSP is the result of a statewide planning process. This plan is developed to be consistent with local, regional, and state policies. Public comment and participation is also actively solicited. Through this planning process and projected available resources, transportation projects are selected for programming, design, and construction.

Planning to Programming

The HSP identifies approximately 9,700 highway system projects with an estimated cost of $57.3 ~~$57~~ billion. Current law revenue projected over the 20 years of this plan is approximately $12.8 billion. Given this shortfall of revenues versus needs, priorities must be set. In accordance with state law (RCW 47.05) WSDOT uses a priority programming process to determine which capital investments (construction projects) will be built within the current biennium, the forthcoming six years and the forthcoming ten years.

WSDOT prioritizes the projects that are selected from the HSP and incorporates those prioritized projects into the 10-year Capital Improvement and Preservation Program (CIPP) (see Appendix I).

Figure 2: *The outer ring reflects all highway system needs identified in the 20-year Highway System Plan. The list is the basis for the 10-year Capital Improvement and Preservation Program. The list is reduced to create the six-year plan based on anticipated and projected revenues. Then, based on available funding, a two-year (biennial) budget is approved by the Legislature.*

These costs are based on the reported conditions of the state highway system and the specific action strategies identified by program/subprogram. *(2001 Dollar values in millions)*

	Millions *(2001 dollars)*
Maintenance (Program M)	
Snow and Ice Control	$710
Traffic Services	$611
Roadway Maintenance and Operation	$553
Drainage Maintenance	$405
Roadside and Landscape Maintenance	$387
Bridge and Urban Tunnel Maintenance	$368
Repair and Disaster Maintenance	$206
Safety Rest Areas-Maintenance and Operation	$98
Maintenace Total	**$3,337***
Operations (Program Q)	
Traffic Flow Control	$207
Low Cost Safety Enhancements	$104
Traffic Flow and Safety Investigations	$84
Low Cost Enhancements	$68
Traveler Information Systems	$43
Advanced Technology for Commercial Vehicles	$40
Local Partnership Traveller Information	$21
Dispatch and Traffic Control	$20
Low Cost Traveler Information	$5
Expand CVISN Statewide	$3
Tourist Attraction Signing	$1
Operations Total	**$596**
Preservation (Program P)	
Pavements - P1	
Pavement (PCCP)	$1,696
Pavement (ACP)	$2,173
Pavement (BST)	$206
Other P1	$456
Pavements Total	**$4,530**
Structures - P2	
Bridge Replacement	$1,051
Seismic Retrofit	$275
Bridge Painting	$177
Bridge Decks	$85
Miscellaneous Structures	$61
Movable Bridges	$43
Scour Mitigiation	$12
Structures Total	**$1,704**
Other Facilities - P3	
Unstable Slopes	$2,045
Traffic Control Systems	$155
Weight Facilities	$129
Electronic/Mechanical Systems	$120
Major Drainage	$51
Safety Rest Area Refurbishment	$18
Other Structures Total	**$2,518**
Preservation Total	**$8,752**

***NOTE:** Impact of Construction Program I needs to be factored into Maintenance Program (M) as follows: An amount equal to one half of one percent of biennium construction dollars for Program I needs to be added to the Highway Maintenance Program for the biennium following the construction.

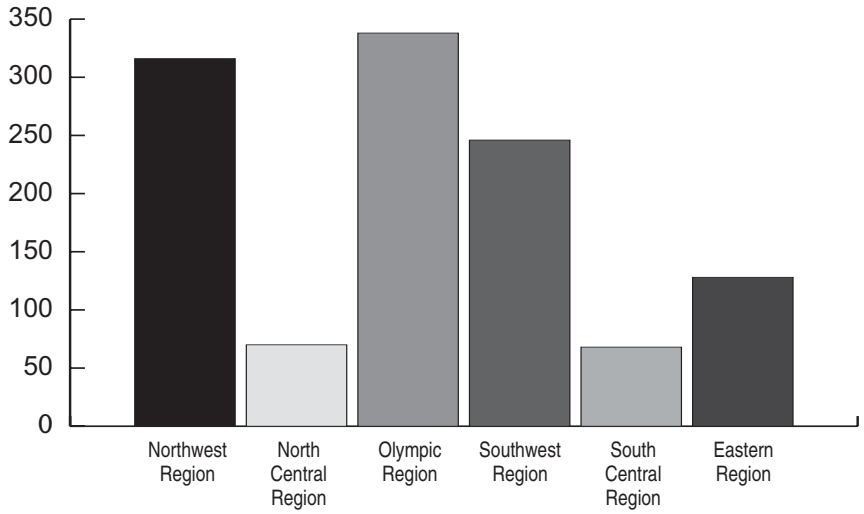
These costs are based on the reported conditions of the state highway system and the specific action strategies identified by program/subprogram. *(2001 Dollar values in millions)*

	Millions *(2001 dollars)*	
Improvements (Program I)		
Mobility - I1		
Congested" HSS	$31,635	~~$32,192~~
Congested" non-HSS	$4,114	~~$4,064~~
Puget Sound Core HOV Lanes	$1,286	~~$1,264~~
Access Management for Non-Developed Corridors	$327	~~$320~~
Access Management for Developed Corridors	$188	~~$167~~
Urban Bicycle	$113	~~$103~~
Multi-Modal Facilities	$58	
Mobility Total	**$37,721**	**~~$38,168~~**
Highway Safety - I2		
High Accident Corridors (HAC)	$677	
At Grade Intersections	$641	~~$583~~
Risk Reduction	$402	~~$430~~
High Accident Locations (HAL)	$269	
Signals and Channelization	$141	
Interstate Safety	$129	
Safety Initiatives	$21	
Pedestrian Risk	$11	
Pedestrian Accident Locations (PAL)	$0	
Highway Safety Total	**$2,291**	**~~$2,260~~**
Economic Initiatives - I3		
International Trade & Port Access	$383	~~$516~~
Avalanche and Flood Closures	$528	~~$34~~
Freight Trunk System	$266	
All Weather Roadways (Freeze/Thaw)	$119	~~$80~~
Height Restricted Bridges	$41	
Columbia/Snake River Accommodations	$19	~~$38~~
Bridge Overloads	$27	
Border Crossings	$10	~~$12~~
Economic Vitality	$1,079	~~$475~~
Bicycle Touring Routes	$642	~~$585~~
Heritage Corridor Plans	$123	~~$124~~
Safety Rest Area	$57	~~$54~~
Heritage Corridors Parks and Viewpoints	$1	
Economic Initiatives Total	**$3,295**	**~~$2,563~~**
Environmental Retrofit - I4		
Stormwater	$1,134	
Fish Barriers	$128	~~$131~~
Noise Reduction	$51	~~$52~~
Chronic Environmental Deficiencies	$40	
Air Quality	$0	
Wetland Mitigation	$0	
Environmental Retrofit Total	**$1,353**	**~~$1,357~~**
Improvement Total	**$44,660**	**~~$44,349~~**
Grand Total All Programs	**$57,345**	**~~$57,034~~**

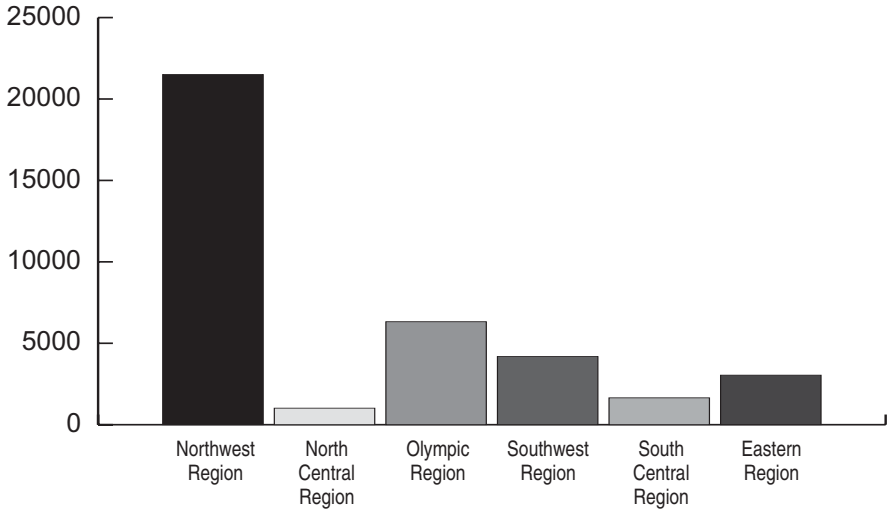
Mobility Strategies

The strategies listed in this section describe the improvements that are needed to meet the mobility objectives for the next 20 years, from 2003-2022. It is important to note that these are planning strategies and that the project scope will be refined during the programming and design phases. Major congestion relief efforts will require extensive public and local agency input, as well as environmental impact analysis prior to selection of a preferred alternative.

Mobility Improvement Subprogram
Number of Strategies by Region



Mobility Improvement Subprogram
Estimated $ Cost in Millions by Region (2001 Dollars)



Northwest Region

Highway Number	Milepost	Vicinity Description	Estimate Cost Range ($ in Millions)
"Congested" HSS			
20	54.89 to 59.78	Fredonia to I-5	42.02 to 56.86
Solution: Widen to four lanes, access management; Rebuild I-5 Interchange (WIN#12039A)			
"Congested" non-HSS			
532	0 to 2.91	East Camano Drive to Island/Snohomish County Line	10.52 to 14.24
Solution: Needs Further Study - Widen to 4 Lanes			

Olympic Region

Highway Number	Milepost			Vicinity Description	Estimate Cost Range ($ in Millions)		
"Congested" HSS							
12	0	to	0.54	US 101 to Wishkah Mall (Tyler Street)	69.14	to	93.54
Solution: High level bridge over the Wishkah River, US 101/US 12 Interchange (Phase 2)							
~~19~~	~~0.09~~	~~to~~	~~0.09~~	~~SR 19-Beaver Valley/SR 104 Vicinity~~	~~0.54~~	~~to~~	~~0.74~~
~~*Solution: Improve existing 40-stall park and ride lot at SR 19/SR 104 intersection*~~							
~~510~~	~~9.99~~	~~to~~	~~10.93~~	~~Nisqually Tribal Center Vicinity~~	~~1.33~~	~~to~~	~~1.79~~
~~*Solution: New 95 stall park and ride lot within Nisqually Reservation*~~							
"Congested" non-HSS							
~~12~~	~~0~~	~~to~~	~~0.54~~	~~US 101 to Wishkah Mall (Tyler Street)~~	~~69.14~~	~~to~~	~~93.54~~
~~*Solution: High level bridge over the Wishkah River, US 101/US 12 Interchange (Phase 2)*~~							
19	0.09	to	0.09	SR 19-Beaver Valley/SR 104 Vicinity	0.54	to	0.74
Solution: Improve existing 40-stall park and ride lot at SR 19/SR 104 intersection							
510	9.99	to	10.93	Nisqually Tribal Center Vicinity	1.33	to	1.79
Solution: New 95 stall park and ride lot within Nisqually Reservation							

South Central Region

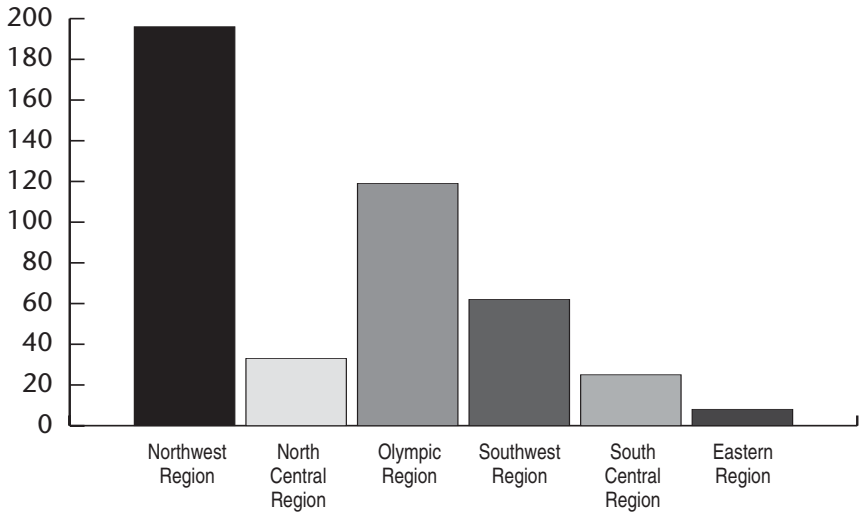
Highway Number	Milepost			Vicinity Description	Estimate Cost Range ($ in Millions)		
"Congested" HSS							
12	185.49	to	190.77	US 12 / SR 410 Intersection ~~south~~ thru Naches	17.71	to	23.95
Solution: Widen to 4 lanes, extend existing two-way left turn lane							
12	295.3	to	299	SR 124 to McNary Pool	6.20	to	8.38
Solution: Widen to 4 lanes, channelize Intersection ~~South~~							
12	299	to	302.59	McNary Pool to Attalia Vicinity	8.59	to	11.62
Solution: Widen to 4 lanes, channelize Intersection ~~South~~							
12	302.59	to	305	Attalia Vicinity	7.13	to	9.65
Solution: Widen to 4 lanes, channelize Intersection ~~South~~							
12	432.61	to	434.05	SR 128 Intersection ~~South~~ to Bridge St (Clarkston)	0.36	to	0.48
Solution: Corridor Study - Needs Further Study							
12	432.61	to	434.05	SR 128 Intersection ~~South~~ to Bridge St (Clarkston)	14.21	to	19.23
Solution: Widen to four lanes with two-way left turn lane							
~~82~~	~~32.72~~	~~to~~	~~33.24~~	~~Fair Avenue Ramps~~	~~10.63~~	~~to~~	~~14.38~~
~~*Solution: Construct two flyover ramps (I-82 to Fair Avenue)*~~							
~~82~~	~~36.03~~	~~to~~	~~36.64~~	~~Valley Mall Blvd Interchange~~	~~9.78~~	~~to~~	~~13.23~~
~~*Solution: Construct capacity improvements for interchange ramps and crossroad*~~							
~~82~~	~~37.24~~	~~to~~	~~38.48~~	~~South Union Gap Interchange~~	~~25.50~~	~~to~~	~~34.50~~
~~*Solution: Complete interchange - add two ramps: Union Gap to westbound I-82 and eastbound I-82 to Union Gap*~~							
097	133.9	to	134.25	I-90 / US 97 Interchange to SR 10 / US 97 Intersection ~~South~~	5.09	to	6.89
Solution: Add 2 lanes to structure crossing I-90, construct intersection improvements							
182	4.3	to	4.3	Wellsian Way/Aaron Dr/Thayer Ramp	1.56	to	2.10
Solution: Improve Westbound ramp and Thayer Intersection ~~South~~ configuration							
"Congested" non-HSS							
14	179.95	to	180.17	Plymouth Road/McNary Court Intersection ~~South~~	1.57	to	2.13
Solution: Construct intersection improvements							
240	20.48	to	21.93	SR 225 Intersection ~~South~~ to Snively Road vicinity	3.64	to	4.92
Solution: Widen to four lanes from SR 225 intersection to Snively Road							
821	0	to	0.7	SR 821 / SR 823 Intersection ~~South~~		to	
Solution: Realign intersection - Northbound SR 823 will become the through movement (cost shown on SR 823)							
823	4.24	to	4.74	SR 821 / SR 823 Intersection ~~South~~	3.73	to	5.05
Solution: Realign intersection - Northbound SR 823 will become the through movement							

Safety Strategies

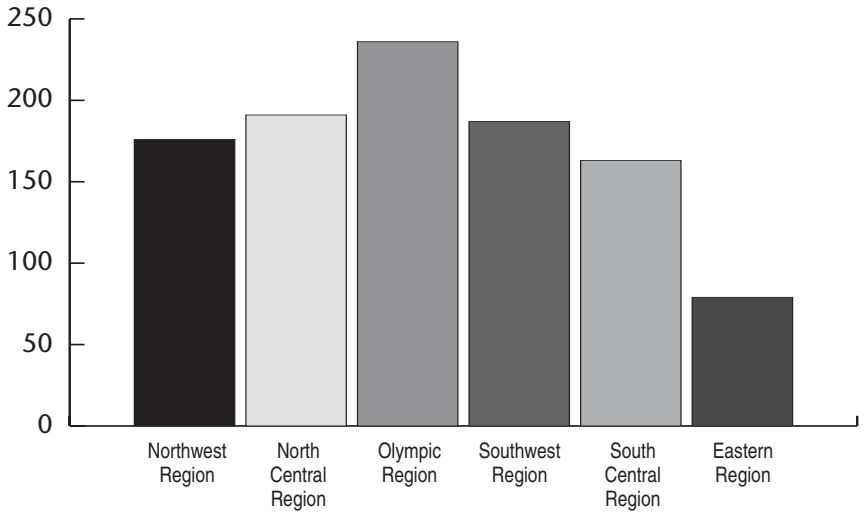
The strategies listed in this section describe the improvements that are needed to meet the safety objectives for the next 20 years, from 2003-2022. It is important to note that these are planning strategies and that the project scope will be refined during the programming and design phases.

Safety strategies were previously categorized into collision reduction and collision prevention improvements. This update of the HSP has changed this categorization by incorporating Collision Reduction strategies into a statewide program category.

Safety Improvement Subprogram
Number of Strategies by Region



Safety Improvement Subprogram
Estimated $ Cost in Millions by Region (2001 Dollars)



Southwest Region

Highway Number	Milepost		Vicinity Description	Estimate Cost Range ($ in Millions)
At Grade Intersections				
~~500~~	~~3.89~~ ~~to~~	~~3.89~~	~~North Thurston Way~~	~~10.70~~ ~~to~~ ~~14.48~~
~~*Solution: New interchange*~~				

South Central Region

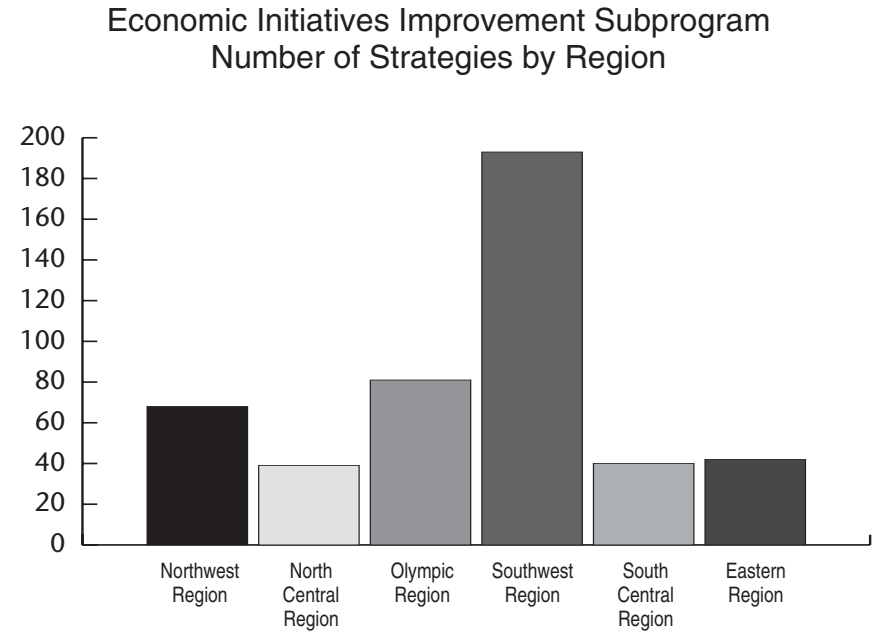
Highway Number	Milepost			Vicinity Description	Estimate Cost Range ($ in Millions)
Risk Reduction					
022	3.9	to	3.99	Junction US 97 vicinity.	0.24 to 0.32
Solution: Improve Intersection ~~I/South~~ Geometrics					

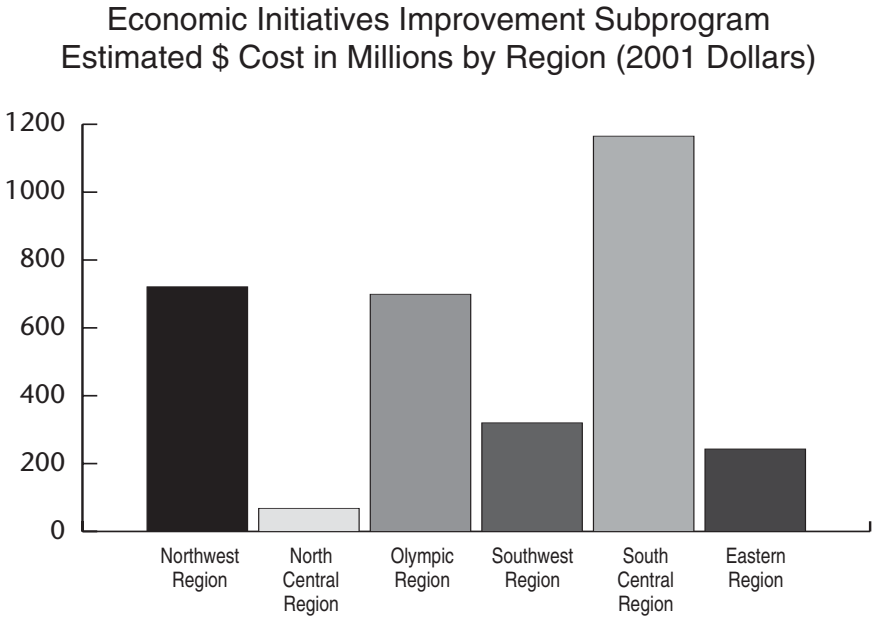
Eastern Region

Highway Number	Milepost	Vicinity Description	Estimate Cost Range ($ in Millions)
At Grade Intersections			
195	94.94 to 94.94	Thorpe Road	10.20 to 13.80
Solution: Construct grade-separated interchange			
~~395~~	~~to~~	~~Muse Road~~	~~8.87~~ ~~to~~ ~~11.99~~
~~*Solution: Construct grade-separated interchange*~~			
395	164.51 to 164.51	North Division Wye (US 395 / US 2)	4.24 to 5.74
Solution: Construct grade separated interchange. Includes US 2 M.P. 292.61 to 292.86			

Economic Initiative Strategies

The strategies listed in this section describe the improve-ments that are needed to meet the economic initiatives objectives for the next 20 years, from 2003-2022. It is important to note that these are planning strategies and that the project scope will be refined during the programming and design phases. Specific detail for each action strategy can be found in the Objective and Action Strategies section.





Northwest Region

Highway Number	Milepost	Vicinity Description	Estimate Cost Range ($ in Millions)
Economic Vitality			
~~20~~	~~54.89 to 59.78~~	~~Fredonia to I-5~~	~~42.02 to 56.86~~
		~~*Solution: Widen to four lanes, access management; Rebuild I-5 Interchange (WIN#12039A)*~~	
International Trade/Port Access			
~~532~~	~~0 to 2.91~~	~~East Camano Drive to Island/Snohomish County Line~~	~~10.52 to 14.24~~
		~~*Solution: Needs Further Study - Widen to 4 Lanes*~~	

South Central Region

Highway Number	Milepost			Vicinity Description	Estimate Cost Range ($ in Millions)
Bicycle Touring Routes					
395	18.25	to	18.25	US 395/SR 240 Interchange	0.22 to 0.30
Solution: Construct separate path @ US 395/~~US~~ SR 240 Interchange vicinity for better pedestrian/bike access.					
Economic Vitality					
82	32.72	to	33.24	~~Fair Avenue Ramps~~ Yakima Avenue Interchange	10.63 to 14.38
Solution: Construct two flyover ramps (I-82 to Fair Avenue)					

Eastern Region

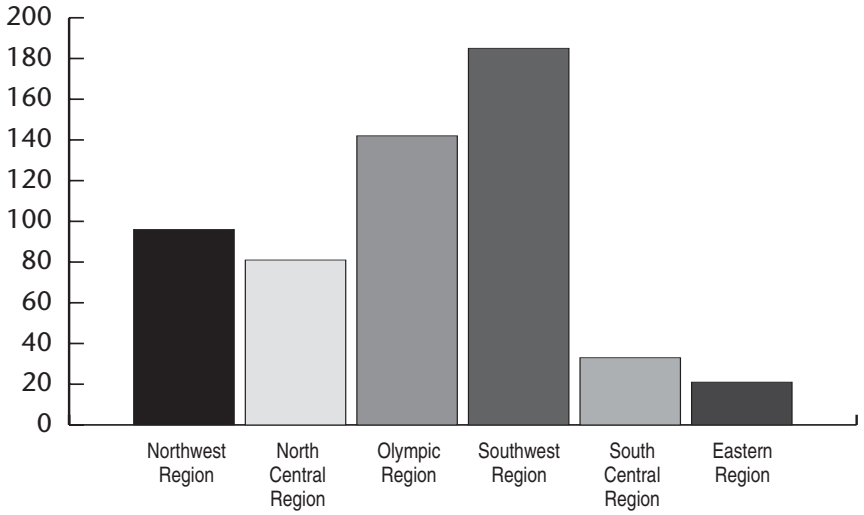
Highway Number	Milepost	Vicinity Description	Estimate Cost Range ($ in Millions)
All Weather Roadways (Freeze/Thaw)			
31	14.2 to 26.79	Metaline Falls to International Border	10.20 to 13.80
Solution: All weather reconstruction			
21~~4~~	27.24 to 37.4	Lind to Junction I-90	1.94 to 2.62
Solution: Reconstruct roadway to eliminate roadway closures due to freeze-thaw conditions.			
21~~4~~	104.57 to 116.78	Wilbur to Keller	2.08 to 2.82
Solution: Reconstruct roadway to eliminate roadway closures due to freeze-thaw conditions.			
23~~4~~	44.29 to 61.6	Junction 231 to Harrington	1.45 to 1.97
Solution: Overlay			

Environmental Retrofit Strategies

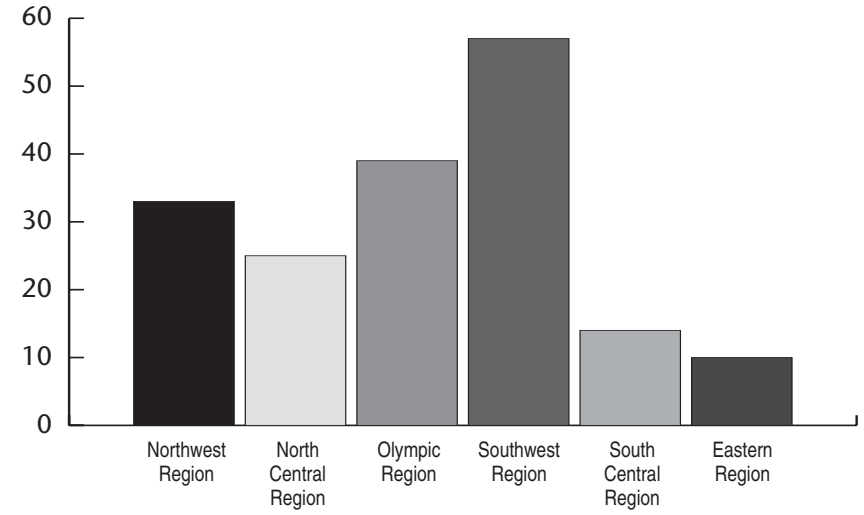
The strategies listed in this section describe the improvements that are needed to meet the environmental retrofit objectives for the next 20 years, from 2003-2022. It is important to note that these are planning strategies and that the project scope will be refined during the programming and design phases. Specific detail for each action strategy can be found in the Objective and Action Strategies section.

These graphs represent the total number and costs of solutions for the I4 Subprogram and do not reflect the identified statewide list of stormwater retrofit strategies. A statewide list of the top 304 prioritized outfalls is located at the end of this section.

Environmental Retrofit Improvement Subprogram
Number of Strategies by Region



Environmental Retrofit Improvement Subprogram
Estimated $ Cost in Millions by Region (2001 Dollars)



Northwest Region

Highway Number	Milepost	Vicinity Description	Estimate Cost Range ($ in Millions)
Noise Reduction			
~~6~~ 5	226 to 226	South end of SR 536 Interchange	1.89 to 2.55
Solution: The proposed mitigation is a Concrete barrier, which is approximately 20 feet high and 2650 long.			
~~6~~ 5	231 to 231	Westview School	0.35 to 0.47
Solution: The proposed mitigation is a Berm / Concrete barrier, which is approximately 20 feet high and 610 long.			
~~6~~ 5	253 to 254	North of Lakeway interchange Bellingham	1.13 to 1.53
Solution: The proposed mitigation is a Concrete barrier, which is approximately 14 feet high and 2500 long.			

Southwest Region

Highway Number	Milepost	Vicinity Description	Estimate Cost Range ($ in Millions)
Noise Reduction			
~~6~~	~~226 to 226~~	~~South end of SR 536 Interchange~~	~~1.89 to 2.55~~
~~*Solution: The proposed mitigation is a Concrete barrier, which is approximately 20 feet high and 2650 long.*~~			
~~6~~	~~231 to 231~~	~~Westview School~~	~~0.35 to 0.47~~
~~*Solution: The proposed mitigation is a Berm / Concrete barrier, which is approximately 20 feet high and 610 long.*~~			
~~6~~	~~253 to 254~~	~~North of Lakeway interchange Bellingham~~	~~1.13 to 1.53~~
~~*Solution: The proposed mitigation is a Concrete barrier, which is approximately 14 feet high and 2500 long.*~~			

Eastern Region

Highway Number	Milepost	Vicinity Description	Estimate Cost Range ($ in Millions)
Fish Barriers			
~~20~~	~~309.31 to 309.31~~	~~O'Brien Creek tributary to Sanpoil River~~	~~0.20 to 0.26~~
		~~*Solution: Improve structure to eliminate restriction to fish passage at this location.*~~	
~~20~~	~~309.96 to 309.96~~	~~North Fork O'Brien Creek tributary to O'Brien Creek~~	~~0.20 to 0.26~~
		~~*Solution: Improve structure to eliminate restriction to fish passage at this location.*~~	
~~20~~	~~310.06 to 310.06~~	~~North Fork O'Brien Creek tributary to O'Brien Creek~~	~~0.20 to 0.26~~
		~~*Solution: Improve structure to eliminate restriction to fish passage at this location.*~~	